EX PARTE OR LATE FILED

ORIGINAL

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Bell Atlantic Telephone Companies'	)	CC Docket No. 96-165
New Expanded Interconnection Tariff	)	

MOTION TO ACCEPT DIRECT CASE ONE DAY LATE

Bell Atlantic respectfully asks the Commission to accept the attached Direct Case of Bell Atlantic one day late. Because of the volume of material that needed to be filed in support of its physical and virtual collocation tariffs, and the press of other cost studies that are being filed in concurrent state proceedings, Bell Atlantic was unable to complete all of the charts before the Commission's 5:30 p.m. close.

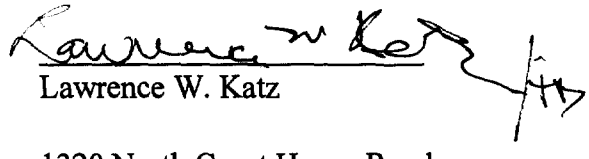
Bell Atlantic would have no objection to a deferral of the comment and reply date for a similar period. In this way, no party will be harmed by the one-day delay in receiving the attached direct case.

Accordingly, Bell Atlantic requests that the Commission accept the attached filing one day out of time.

Respectfully Submitted,

The Bell Atlantic Telephone Companies

By their Attorney



Lawrence W. Katz

1320 North Court House Road
Eighth Floor
Arlington, Virginia 22201

(703) 974-4862

Michael E. Glover
Of Counsel

April 25, 1997

ORIGINAL

Before the
Federal Communications Commission
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

In the Matter of	)	
	)	
Bell Atlantic Telephone Companies'	)	CC Docket No. 96-165
New Expanded Interconnection Tariff	)	

BELL ATLANTIC'S DIRECT CASE[1]

Pursuant to the Commission's Order,[2] Bell Atlantic respectfully submits its Direct Case in this proceeding. Responses to specific requests, submitted by paragraph in the order in which they appear in the Order, are supported by material in the various Attachments. The Attachments also contain statistical material to meet the Tariff Review Plan requirements of the Order.

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[1] The Bell Atlantic telephone companies ("Bell Atlantic") are Bell Atlantic-Delaware, Inc.; Bell Atlantic-Maryland, Inc.; Bell Atlantic-New Jersey, Inc.; Bell Atlantic-Pennsylvania, Inc.; Bell Atlantic-Virginia, Inc.; Bell Atlantic-Washington, D.C., Inc.; and Bell Atlantic-West Virginia, Inc.

[2] ***Order Designating Issues for Investigation***, DA 97-523 (Com. Car. Bur., rel. Mar. 11, 1997).

This filing demonstrates that the rates, terms and conditions in Bell Atlantic's collocation tariff are fully justified and that the Commission should promptly find it fully reasonable and lawful.

Respectfully Submitted,

The Bell Atlantic Telephone Companies

By their Attorney

Lawrence W. Katz

1320 North Court House Road
Eighth Floor
Arlington, Virginia 22201

(703) 974-4862

Edward D. Young, III
Michael E. Glover
Of Counsel

April 24, 1997

BELL ATLANTIC

ATTACHMENT A

RESPONSES TO INFORMATION REQUESTS

Responses To Information Requests

B. Direct Costs

¶ 28 Request
We require Bell Atlantic to submit TRP charts that display the DS1 and DS3 physical collocation investments, direct costs, and prices. We also require Bell Atlantic to submit a separate TRP chart to display the same data for its Short-Term DS3 physical collocation service.

¶ 29 Request
We require Bell Atlantic to allocate the data requested in ¶ 28 among the 14 Physical Collocation functions identified by the Commission.

¶ 30 Request
We require Bell Atlantic to complete the TRP Charts to reflect the overall cost for physical collocation DS1 service, assuming the provision of 100 DS1s. The DS3 TRP charts must reflect the overall cost for physical collocation DS3 service, assuming the provision of four DS3s. The TRP charts also must reflect the assumptions that 100 square feet of caged physical collocation space within the central office and 40 amps of DC power are used for providing these DS1 and DS3 volumes. Nonrecurring direct costs are to be amortized over a 60 month period at an 11.25 percent interest rate. In addition, reasonable assumptions must be used for the quantity of other inputs (e.g. cable lengths) needed to provide 100 DS1s and four DS3s and identify and explain the basis for these assumptions.

Response:

The TRP charts are submitted as Attachment B. The assumptions used for the quantity of other inputs (e.g. cable lengths) are shown in Attachment D. The assumptions used in that attachment were based upon Bell Atlantic's actual experience with over 100 collocation installations that Bell Atlantic had performed as of the date of the studies. The figures used came from the Bell Atlantic personnel who performed and supervised the installations and maintenance activities for these installations.

¶ 31 Request
We require Bell Atlantic to identify on the TRP Charts any physical collocation rate element that includes costs associated with more than one of the 14 physical collocation functions. We require Bell Atlantic to allocate the rate and its associated direct costs among the subset of functions involved and demonstrate that these allocated amounts equal the unallocated direct cost and unit rate.

Response:

Where applicable, the TRP Charts in Attachment B display those physical collocation rate elements that include costs associated with more than one of the 14 physical collocation functions. The charts are labeled to demonstrate that the allocated amounts equal the unallocated direct cost and unit rate.

¶ 32 Request

We require Bell Atlantic to submit TRP charts that display their DS1 and DS3 virtual collocation investments, direct costs, and prices. We require Bell Atlantic to submit a separate TRP chart to display the same data for its Short-Term DS3 physical collocation service.

¶ 33 Request

We require Bell Atlantic to allocate the data requested among the 7 Virtual Collocation functions identified by the Commission.

¶ 34 Request

We require Bell Atlantic to complete the TRP Charts to reflect the overall cost for virtual collocation DS1 service, assuming the provision of 100 DS1's. The DS3 TRP charts must reflect the overall cost for virtual collocation DS3 service, assuming the provision of four DS3s. Nonrecurring direct costs are to be amortized over a 60 month period at an 11.25 percent interest rate. In addition, reasonable assumptions must be used for the quantity of other inputs (e.g. cable lengths) needed to provide 100 DS1s and four DS3s and identify and explain the basis for these assumptions.

Response:

The TRP charts are submitted as Attachment C. The assumptions used for the quantity of other inputs (e.g. cable lengths) are shown in Attachment D. The assumptions used in that attachment were based upon Bell Atlantic's actual experience with over 100 collocation installations that Bell Atlantic had performed as of the date of the studies. The figures used came from the Bell Atlantic personnel who performed and supervised the installations and maintenance activities for these installations.

¶ 35 Request

We require Bell Atlantic to identify rate elements that includes costs associated with more than one of the 7 virtual collocation functions. Allocate the rate and its associated direct costs among the subset of functions involved and demonstrate that these allocated amounts equal the unallocated direct cost and unit rate.

Response:

Where applicable, the TRP Charts in Attachment C display those virtual collocation rate elements that include costs associated with more than one of the 7 virtual collocation functions. The rate and its associated direct costs have been allocated among the subset of functions involved.

¶ 37 Request

We require Bell Atlantic to file a copy of all cost studies on which the proposed rates for physical and virtual collocation are based. Explain how workpapers filed relate to the cost studies.

Response:

The relevant material from the cost studies appears in the TRP charts included in Attachments B and C.

¶ 38 Request

We require Bell Atlantic to explain the data, assumptions, and methodologies on which all physical and virtual collocation investments, direct capital costs, and direct operating expenses are based. (a.) We require Bell Atlantic to submit worksheets showing the data and calculations that underlie these costs. (b.) We require Bell Atlantic to explain and justify their annual cost factors. (c.) We require Bell Atlantic to explain whether the investments on which the physical and virtual collocation direct costs are based are calculated on a prospective basis, on a historical basis, or some other basis, and justify the approach used to develop these costs.

Response:

Bell Atlantic used Total Service Long Run Incremental Costs (TSLRIC) to develop its cost studies. All costs were forward-looking and incremental. The planning period for Bell Atlantic's cost study was five years, from 1995 through 1999 using an estimated five-year demand growth. No inflation or productivity factors were applied, since it was anticipated that the prices, labor rates, labor hours and demand denominators would be updated frequently and new costs and rates developed every 12 to 24 months. It was expected that this procedure would account for inflation and productivity on a forward-looking basis, since the latest price changes and productivity improvements would be reflected in each cost/rate update.

Bell Atlantic cost studies were based upon the current or planned location of network facilities. Cost studies were performed to determine the service-specific investments underlying the rates for each recurring element. The "loaded" investment was determined by applying both land and building factors to capture the investment in land and building that is associated with the equipment. The power and common equipment factor was also applied to the central office digital and SONET equipment accounts. The common equipment consists of equipment shared by any and all categories in a central office, e.g. ladders, connectors, tools, testing equipment and equipment frame racking equipment. The power equipment provides the electricity and consists of backup diesel generators, battery strings (racks of multiple batteries), transformers (AC to DC converters), safety equipment (fuse panels and alarms) and copper bus bars to carry high current load.

TSLRIC costing methodology was also used to develop the forward-looking Annual Cost Factors (ACFs). These cost factors are mathematical relationships between various cost components (typically, investments and expenses). The sources for cost factors include the financial database, engineering studies, economic consultants, corporate finance, tax, and capital recovery organizations. ACFs, were then multiplied against the loaded unit investments for each recurring rate element and this figure was divided by 12 to calculate the monthly recurring cost.

Attachment D describes the basis for the assumptions used in the development of the costs to support the above mentioned recurring rate elements.

Attachment E contains a description of each annual cost factor. Bell Atlantic calculated capital costs and operating expenses attributable to specific projects. The capital costs include: depreciation, post tax income, and income tax expense. The operating expenses include: maintenance, right-to-use fees, administrative expenses, ad valorem taxes, gross receipts taxes (which are not applicable to interstate FCC studies), and user defined expenses. Capital costs recognize plant survivor characteristics accelerated tax procedures, tax expenses, and return on investment. The program permits studies of an individual asset, a single vintage of assets, or multiple vintages. Program results were calculated for each category on a year-to-year basis, plus a summarization of all categories.

The investments used in the cost studies were a combination of 1995 and 1996 prices because some of the 1995 prices did not change in 1996. An estimated forward-looking demand with 10% annual growth over the five year planning period (1995-99) was used to develop the factor. Since there is no empirical basis on which to project collocation demand over five years, Bell Atlantic assumed an annual growth rate of 10% which was the actual collocator growth rate that was being experienced at the time of the study. No inflation factors were applied to the investments, since it was anticipated that the costs and rates would be updated every 12 to 24 months to reflect price changes. These planned updates would then create a forward-looking situation where price increases or decreases would be accounted for. This is a more accurate way of recovering actual costs than using factors since collocation is a rapidly changing service, making price projections over a five year period very difficult.

¶ 39 Request

Bell Atlantic must document and explain the cost of capital or money used in developing the direct costs and depreciable lives for plant and equipment. If it exceeds 11.25%, the portion exceeding must be explained and justified. Justification includes the documentation and explanation of the data, assumptions, and methodologies which the cost of debt, cost of equity, and capital structure were based.

Response:

The incremental cost of capital for Bell Atlantic regulated investments used in 5-year planning horizons and engineering economy studies for long-lived capital investments (5-20 years) was 11.90%. The components used to determine the cost of capital include capital structure, cost of long term debt, and cost of equity.

The cost of capital, like all other costs, were developed on a forward-looking, rather than embedded, basis. This is appropriate, because, when Bell Atlantic enters financial markets to raise capital, it is treated the same way as any other firm with similar risk characteristics. Investors will demand a return equal to Bell Atlantic's current risk and do not adjust their expected return to meet the Commission's 11.25% authorized rate of return.

The capital structure used in Bell Atlantic's study was 40% debt, 60% equity, which was the Bell Atlantic telephone companies' anticipated capital structure during the five-year planning period. It also coincided with the capital structure of the Bell Atlantic telephone companies at the time, adjusted for one time accounting transactions. The forward-looking cost of long-term debt was set at 8.3%, which was the current rate of new long-term debt at the time. It also coincided with the figure obtained through a regression analysis of 30 year Treasury rates in comparison to Moody's Bond record data for AA Public Utility Bonds, which was the rating of most of Bell Atlantic's new long-term debt.

The cost of equity, 14.3%, was developed using an equity analysis focused on the discounted cash flow of Standard and Poor (S&P) Industrials. Use of a discounted cash flow (DCF) methodology is consistent with Bell Atlantic's other price cap filings. As was also the case in earlier filings, the cost of equity was the average of companies with comparable risk factors to Bell Atlantic. As Dr. James Vander Weide testified in the Commission's Price Cap proceeding, Bell Atlantic at the time fell in the third quartile of S&P industrials based on a risk analysis.[1] Other companies in that quartile at the time of the study (early 1995) included AT&T, Xerox, Merck, Boeing, International Paper and Chevron, all of which at the time were established companies in stable markets and were subject to lower than average risk. Bell Atlantic used the average cost of equity of the S&P industrial companies in the same quartile at the time, or 14.3%.

The depreciation lives used in the studies to support the 1995 virtual collocation FCC tariff filing were also used in the studies that supported the 1996 collocation tariff filing (physical collocation introduction and virtual collocation update). Since the 1996 cost studies supporting Bell Atlantic's filing[2] were considered an extension of the costing work used to support the 1995 virtual collocation offering, the same annual carrying charge factors were used.

[1] Affidavit of Dr. James H. Vander Weide in Support of Reply Comments of Bell Atlantic, CC Docket No. 94-1 at 26 (filed June 29, 1994).

[2] Bell Atlantic Tariff FCC No. 1, Transmittal No. 883 (filed June 4, 1996).

¶ 40 Request

We require Bell Atlantic to describe each labor function for which costs are recovered in the physical and virtual collocation rates. (a.) We require Bell Atlantic to provide the estimated number of labor hours required to perform these functions, and (b.) fully explain and document the data, assumptions, and methodologies by which these labor hours and costs are estimated. (c.) We require Bell Atlantic to describe whether the estimated labor costs reflect only wages, wages plus benefits, wages plus benefits and loadings, or whether costs are estimated on some other basis. (d.) If loadings are included in labor costs, we require Bell Atlantic to describe what portion of the reported wage rate is attributable to loadings.

Response:

The cost studies performed for Bell Atlantic's expanded interconnection filing support the following cost components.

- Cable Support - Physical and Virtual
- DS3/DS1 Cross Connect - Physical and Virtual
- Design and Planning Physical and Virtual
- Vendor Installation of Collocator-Provided Virtual Equipment
- Power for Physical

Since a cost component may include costs from several labor functions, Bell Atlantic describes below each labor function, the related labor hours, and the associated labor rates in relationship to each cost component. The hours listed for each function are based on Bell Atlantic's actual experience with the average time required for each.

1. Cable Support Element - Virtual:

   a. Labor Function: Pull and splice the cable from the manhole to the fiber distribution frame. The labor activity to pull and splice the fiber cable from the manhole to the central office was a 50/50 weighting of the two different scenarios that could be used dependent on the option a collocator elected when delivering the collocator fiber to the central office. In virtual collocation, the collocator has an option of providing fiber cable of sufficient length to extend to the Bell Atlantic virtual collocation space, or provide fiber cable of sufficient length to be spliced in the central office vault to existing Bell Atlantic fiber cables.

   b. Labor Hours for Scenario 1:

      - Cable pull from manhole through vault to fiber distribution frame: 10 hours

- Cable splice at fiber distribution frame: 8 hours

c. Labor Hours for Scenario 2:

- Cable pull from manhole through vault to fiber distribution frame: 10 hours
- Cable splice at fiber distribution frame: 1 hour
- Cable splice in CO vault: 6 hours

d. Labor Hours for Scenario 3:[3]

- Cable pull from manhole through vault to fiber distribution frame: 10 hours
- Cable splice at fiber distribution frame: 4 hours
- Cable splice in CO vault: 3 hours

e. A description of the methodology supporting the Virtual Cable Support element is shown in Attachment D, Cost Assumption document, Section II.A.

2. Cable Support Element - Physical:

a. Labor Function: Pull and splice the cable from the manhole to the collocator equipment.

b. Labor Hours for Scenario 1:

- Cable pull from manhole through vault to cage: 10 hours
- Cable splice at cage: Work performed by collocator.

c. Labor Hours for Scenario 2:

- Cable pull from manhole through vault to cage: 10 hours
- Cable splice at cage: 0 hours for Bell Atlantic - Work performed by collocator.
- Cable splice in CO vault: 0 hours. Not done in Physical.

d. Labor Hours for Scenario 3:

- Cable pull from manhole through vault to cage: 10 hours
- Cable splice at cage: 0 hours for Bell Atlantic - Work performed by collocator.
- Cable splice in CO vault: 0 hours - Not done in Physical.

e. For a detailed description of the methodology which supports the Physical Cable Support element, please refer to Attachment D, the Cost Assumption document, Section III.A.

[3] Labor hours used in Bell Atlantic filing of June 4, 1996, Transmittal utilized a 50-50 weighting of the labor hours from Scenarios 1 and 2.

3. DS3 and DS1 Virtual Recurring Costs:
   a. Labor Functions:
      - Facility Maintenance Center: Takes the repair call, dispatches the CO technician and closes the trouble. Average time per trouble: 30 minutes
      - CO technician: Repairs the trouble. Average time per trouble: 1.5 hours
   b. Annual Labor Hours to maintain an EDSX were based on Bell Atlantic's actual experience from their Virginia Network Operations Center (NOC) which is typical of the Bell Atlantic region.
   c. For cable, cable rack and the storage unit, Bell Atlantic assumed zero annual maintenance labor hours since it anticipated that there will be very little repair work or company-initiated rearrangements required.
   d. Fiber distribution frame labor hours assumed 3 troubles per year based on the experience of Bell Atlantic field staff.

4. DS3 and DS1 Physical Recurring Costs:
   a. EDSX maintenance labor hours and repair call data is the same as for Virtual DS3/DS1.
   b. Labor time of 30 minutes to install a DS3 repeater based on experience of Bell Atlantic staff personnel.

5. Design and Planning Nonrecurring Costs for Physical and Virtual:
   a. Refer to the TRP sheets, Attachments B and C, for the average regional labor hours and jurisdictional labor rates used for each function.

6. Collocation Circuit Nonrecurring Costs:
   a. For the circuit nonrecurring labor hours (TOC - or task-oriented cost) and the jurisdictional labor rates, refer to the TRP sheets in Attachments B and C.
   b. For a detailed description of the job functions, refer to Attachment D, the Cost Assumptions, Section III.F.
   c. The circuit nonrecurring costs apply to special and switched, as well as physical and virtual.

Listed below is a sample breakdown of the development of one of the labor rate functions used in the collocation cost study, along with a description of each component. The inputs and dollar amounts vary from one job function to another, but this is typical of the general labor rate methodology.

Job Function Code: 0411

Job Title: Product Manager, Collocation

Hourly Labor Cost Components Using 1996 Dollars:

a. PROD - Productive Wages & Salaries: $36.64
b. AD/CL - Administrative & Clerical support: $1.82
c. SUPV - Supervisory support: N/A
d. PREM - Premium Overtime: N/A
e. PDABS - Paid Absence (vacation, short term illness & excused time): $5.26
f. DIR.LAB - Direct Labor (sum of lines a. through e.): $43.73
g. SS - Social Security taxes attributable to direct labor: $3.97
h. BP - Benefits and Pensions attributable to direct labor: $19.31
i. Other Related Costs - Certain Voucherable Expenses: $5.93
j. TOT.DIR - Total Directly Assigned (sum of lines g. through j.): $72.94
k. General & Administrative Expenses for such things as archives, mail services and other miscellaneous costs of a corporate nature: $14.42
l. TOTAL - Total Fully Assigned Labor (sum of lines j. & k.) $87.36 per hour for 1996
   NOTE: The 1995 fully assigned labor rate was $80.84.

¶ 41 Request

We require Bell Atlantic to provide diagrams clearly identifying each expanded interconnection component indicating whether it is owned by Bell Atlantic of the interconnector.

Response:

The diagrams and rate elements descriptions are provided in Attachment F.

¶ 49 Request

We require Bell Atlantic to provide each page from the *Black's Office Leasing Guide (Black's Guide)* that were used to develop Bell Atlantic's central office occupancy rates and identify the specific data on that page that it used to develop its central office rates. (a.) Include the specific page and the data, including the rate per square foot used for each central office to develop the central office occupancy rates. (b.) Include the assumptions and methodology used to determine the prevailing per square foot rate, including the data upon which it was based.

Response:

Bell Atlantic derived central office occupancy rates using Black's Guide and the other real estate sources as listed in Attachment G. The derivation of the rate for each one of the 147 physical collocation offices, as well copies of documentation for representative offices appear in Attachment G.

Bell Atlantic's central office occupancy rates were derived by the addition of two components; the "Full Service Rental Rate" and the "Rent for Central Office Features." The second of these components is addressed in the next response and the first is described further here. The Full Service Rental Rate component is a geographic location-specific cost for standard office space located near each of the Central Offices. This market rental rate for standard office space was obtained from two sources; 1.) published sources such as the Black's Office Leasing Guide and other similar publications and 2.) when comparable office space rates were not available, specific market assessments were performed by commercial real estate brokers. In every case these market rates are composed of two components. The first is the pure rent component, net of any other costs or services (known as a triple-net rent). The second is the operating costs (property taxes, utilities, cleaning, maintenance). Operating costs were derived from locally published real estate data, the nationally published BOMA Experience Exchange Report, or assessments of local real estate brokers. Each component was derived separately to ensure that no cost was double counted. These office space operating costs are generally for operating a building during normal business hours. Because a central office operates 24 hours per day and seven days per week this methodology understates the true cost of operating space in a central office.

The combination of the two components described produces the "Full Service Rental Rate" for standard commercial office space specific to the location of each central office.

The basic formula is:

1. Market Rental Rate for Standard Office Space

\+ Operating Costs

= Full Service Rental Rate (standard office space)

¶ 50 Request

We require Bell Atlantic to provide pages from *The Means Cost Estimating Guide (Means Guide)* that were used to develop additional costs unique to central offices. (a.) Include the specific page and the data used to develop this rate. (b.) Identify additional central office costs by category, e.g. reinforced flooring. (c.) Include the explanation from the *Means Guide* on the methodology used to determine the central office floor space costs. (d.) Identify and justify the assumptions used in the *Means Guide* to determine these costs, including the data upon which it was based.

Response:

The second component of Bell Atlantic's central office occupancy rates, shown in Attachment H, is the "Rent for Central Office Features." This component identifies the extraordinary costs that distinguish central office space from standard commercial office space. Features such as higher ceilings to accommodate switch frames and cable racking, reinforced structure to support heavy equipment, greater electrical system capacity, environmental conditioning for humidity and air filtration, and heightened fire and security protection make a central office unique from standard office space. The value of these features were derived from the R.S. Means Building Construction Cost Data for each of the metropolitan areas in Bell Atlantic's region for which data was available. An average cost of the central office features was multiplied by the Company's composite cost of capital to produce an annual rental rate per square foot for these features. Attachment H provides the details of the calculations of the "Rent for Central Office Features" and applicable pages from the R.S. Means guide.

Adding the market rate for standard office space (see Response to ¶ 49), plus the rate for central office features produces the rate per square foot for each central office. Attachment I displays the

Real Estate Market Rate, the value of the Central Office Features, the Total Market Value Rate both annually and monthly, and the derived Tariff Rate based on Bell Atlantic's rate banding price model.

Bell Atlantic's formula for developing the Total Floor Space Charge per central office is displayed below:

1. Market Rental Rate for Standard Office Space
   + Operating Costs

   = Full Service Rental Rate (per square foot of standard office space)

2. Regional Cost of Central Office Features ($52.35)
   x Composite Cost of Capital (12.90%)[4]

   = Annual Rental for Central Office Features (per square foot)

1 + 2 Full Service Rental Rate
   + Annual Rental for Central Office Features

   = Total Floor Space Charge

All of these costs were determined for and filed in the 1993 Special Access Collocation tariff. To avoid the cost of updating all of the floor space cost data, the same 1993 costs have been used in most cases, in spite of the increase in real estate values that has occurred since 1993.

¶ 51 Request

We require Bell Atlantic to provide a description and justification for any additional costs that was added to the rate per square foot set forth in Black's Guide to develop central office occupancy rates.

[4] This was Bell Atlantic's forward-looking cost of capital in 1993, when these studies were performed.

Response:

All applicable costs are described above.

¶ 52 Request

We require Bell Atlantic to identify and explain the need for "point of interconnection" equipment. Explain any differences between the engineering function provided by this piece of equipment and the engineering function provided by a point of termination bay or frame.

Response:

Bell Atlantic defines the "point of interconnection" in its collocation arrangement as the Digital Signal Physical Access Point (DSPAP) equipment. The physical collocation environment calls for a space in a central office to be reserved to accommodate and provide security for transport equipment belonging to the collocation customer. In an area adjacent to the collocator's dedicated space, Bell Atlantic establishes a common area where the collocator's network interfaces with the Bell Atlantic network. The DSPAP provides this common point of interface, as well as a common test point. The signal at the "out jack" of the DSPAP must meet the "pulse mark" requirements as described in ANSI T1.102.1993 for both the collocator's transport equipment and Bell Atlantic transport equipment. The DSPAP is accessible by both the collocator and Bell Atlantic and use of the DSPAP for testing ensures that connections can be efficiently installed and maintained. This equipment helps Bell Atlantic meet the Commission's requirement to give collocators testing capabilities over their collocated services.

The DSPAP provides the ability to non intrusively test and monitor these requirements. It also provides for the termination of both the collocator and Bell Atlantic network elements and the ability to perform fault sectionalization between Bell Atlantic and the collocator's network. The point of termination bay merely provides a place where 2 networks are spliced together and guidelines could not be verified without using intrusive testing methods. The DSPAP equipment that Bell Atlantic uses provides for a non-intrusive as well as an intrusive testing choice available to both the collocator and Bell Atlantic. Additionally, Bell Atlantic's sensitivity to security in the collocator's common area is evident in the fact that each collocator is provided with a specific DSPAP that can be locked.

A point of termination bay alone would not provide the loopback testing capability of the DSPAP to meet the pulse mark requirements.

¶ 53 Request
We require Bell Atlantic to explain why repeaters are needed to provide DS3 physical collocation services and (a.) when a repeater is necessary. (b.) We require Bell Atlantic to identify the technical standard underlying this assumption and (c.) explain why Bell Atlantic is unable in those arrangement to place the interconnector's equipment in close proximity to its equipment to obviate the need for repeaters.

Response:

Repeaters are electrical devices used to ensure that the signal transmitted between the collocator's cross connect and Bell Atlantic's cross connect is set to the correct level. A signal that is too low causes reduced throughput and is subject to interfering noise from other adjacent higher level signals; a signal that is too high causes cross-talk. The digital facilities (DS3) require an equal level test point and are distance sensitive. In a collocation arrangement, Bell Atlantic will engineer the DS3 facility to meet an industry standard equal level test point. The standard is based on the adherence to a pulse mask that is defined in Bellcore document GR-499-CORE and ANSI T12.102-1993. Based on these standards, DS3 repeaters are needed to provide DS3 physical collocation services when the distance between the DSPAP panel in the collocation space and the Bell Atlantic equipment exceeds engineered distance limitations. Bell Atlantic estimated that DS3 repeaters will be required in 15% of the physical collocation sites based upon site surveys at a representative sampling of collocation central office space.

There are several reasons the collocators' equipment will be located beyond the distance limitations and require repeaters in these limited number of instances. The distance from Bell Atlantic equipment in a physical collocation arrangement is only one factor in the designation of collocators' dedicated space. For example, the area selected for physically collocated space is typically located in close proximity to building entrances in order to provide a collocator with secured access to the collocated space and limit access to Bell Atlantic equipment areas. The construction costs associated with establishing physical collocation space and the ability to

provide secured access are also weighed in the implementation of physical collocation space. Locating collocator space closer to Bell Atlantic equipment but further from building entrances in some instances would impose higher design and construction costs that would outweigh the cost of repeaters. In addition, there simply may not be enough available space in some instances to accommodate multiple collocators in sufficiently close proximity to Bell Atlantic network equipment to eliminate the need for repeaters. And even if it were possible in some subset of these instances to create new space, doing so would require undertaking expensive major renovations to the central office and associated equipment that would far exceed repeater costs and could disrupt service to the public.

¶ 54 Request

We require Bell Atlantic to explain the engineering function provided by the DSPAP.

Response:

The only way to assure that quality connections can be efficiently installed and maintained is for Bell Atlantic to use the established central office standards of interconnecting digital signals at the DS1 and DS3 transmission speeds. These standards are spelled out in specific Bellcore documents and ANSI T12.102-1993 publications. All signals must meet the standardized "pulse masks" as published in Bellcore GR-499-CORE at the Equal Level Point defined as the Digital Signal Physical Access Point (DSPAP). Bell Atlantic engineers to these Bellcore standards. For collocation purposes, Bell Atlantic utilizes the interconnect mode of DSPAP panels versus the cross connect mode of DSPAP panels set out in these publications since circuit rearrangements are not a requirement at the interconnection point.

The DSPAP for DS1 interconnection is an ADC DDP1 (Digital Distribution Panel) which is a modular digital signal cross connect panel that will terminate 56 DS1 circuits. The DSPAP for DS3 interconnection is an ADC DSX-4H-SB-ICM modular digital signal cross connect panel capable of terminating 24 DS3 circuits. Both panels allow for loopback testing and pulse mark measurements between the collocator's equipment and Bell Atlantic's equipment. The DSPAP provides the common point of interface between the collocator's digital signal and Bell Atlantic's digital network. An interface panel at the collocation area will ensure that both Bell Atlantic and

the collocator have terminated their cable properly and allow proper identification of transmission directions. This interface panel must also be at an equal level test point to interface properly between Bell Atlantic network elements and the collocator's equipment.

¶ 55 Request

We require Bell Atlantic to explain the engineering function provided by the "electronic digital cross-connect" (EDSX). (a.) We require Bell Atlantic to explain whether it is feasible to allow interconnectors to self-provision the EDSX, and (b.) whether it is feasible to allow interconnectors to purchase a hard-wired digital signal cross-connect (DSX) in lieu of the EDSX.

Response:

The Electronic Digital Cross Connect Systems (EDSX) device allows Bell Atlantic to provide faster more efficient provisioning and routing changes, a better response time, and remote testing capability, none of which were possible through manual DSX devices. Manual DSX devices constitute obsolete technology that is no longer being deployed. Bell Atlantic does not allow interconnectors to self-provision the EDSX because each EDSX is used to provide service to multiple customers, both collocators and interconnection service customers. The EDSX is therefore an integral part of Bell Atlantic's service, like any other network equipment that serves multiple customers. If a collocator were to provide its own manual DSX to connect to Bell Atlantic's EDSX, a manual process would be introduced in the provisioning and maintenance of service, and this would adversely impact provisioning costs, service outage durations, add to maintenance costs and create unnecessary points of failure. These higher incidents of failure would impair the operations of both the collocator and Bell Atlantic.

¶ 56 Request

We require Bell Atlantic to provide an augmented diagram of the connection elements for physical collocation, to include the following missing connection elements: (a) DSPAP interface connections for DS3 service, and the (b.) fiber cable (c.) and LAN cable for DS1 service.

Response:

The augmented diagrams and missing connection elements are provided in Attachment F.

¶ 57 Request

We require Bell Atlantic to explain the methodology used to develop the 67% utilization adjustment factor supporting the Short-Term DS3 costs and (a.) provide an explanation of the rationale that underlies the application of the utilization factor.

Response:

The Short-Term DS3 for collocation simply adopts the same utilization factor that Bell Atlantic used for the Short-Term DS3 for access services and justified in the filings for that service. This is consistent with the Commission policy that the collocation tariff must track the comparable access tariff wherever feasible. See Transmittal No. 697 (filed September 23, 1997) and Transmittal No. 735 (filed January 20, 1995). The access tariff used a 67% utilization factor based on Bell Atlantic's experience that the equipment would be idle 1/3 of the time between requests for short-term services.

¶ 58 Request

We require Bell Atlantic to identify the following as investment items on the TRP Charts under the appropriate TRP function: (1) the piece of equipment that connects Bell Atlantic facilities to the interconnector's facilities; (2) the DS3 repeaters, (3) the DSPAP interface connections, and (4) the EDSX. (a.) We require Bell Atlantic to submit complete TRP data separately setting forth the investment amount, annual cost factors, direct capital costs, direct operating costs, and the amount of the charge allocated to these pieces of equipment from the overall rate that recovers their direct costs. (b.) We require Bell Atlantic to explain the methodology used to develop the costs for this equipment and justify the methodology used to develop these costs.

Response:

The TRP Charts are submitted as Attachment B and C. The attachment also contains a detailed list of the assumptions and methodology used by Bell Atlantic in the development of the DS1 and DS3 interstate Collocation investments, costs and expenses. The information supporting the costs and assumptions was developed based upon the experience of Bell Atlantic network operations staff, installation field personnel, product line managers, vendors, based on their direct experience with this type of equipment and Bell Atlantic's actual experience with over 100 collocation installations that Bell Atlantic had performed as of the date of the studies. The figures used came from the Bell Atlantic personnel who performed and supervised the installations and maintenance activities for these installations.

¶ 59 Request

File a copy of the 1996 Cost Study used as the basis for the recurring and non-recurring rate changes proposed for the virtual collocation DS1, DS3, and Short-Term DS3 cross-connect rate elements.

Response:

The relevant information from the 1996 cost study appears in the TRP charts included in Attachments B and C.

C. Overhead Loading Factors

(¶ 71) Request

We require Bell Atlantic to submit the overhead loading factor used for each expanded interconnection service rate elements, (a.) explain and document the data, methodologies, and assumptions by which these factors were derived, and (b.) justify the reasonableness of the factors. (c.) We require Bell Atlantic to submit the data used to compute the factors, identify the sources from which the data was derived, (d.) provide copies of all workpapers showing calculations that underlie the development of these factors. and (e.) explain any variation in the overhead loading factors among expanded interconnection rate elements.

Response:

As Bell Atlantic stated in filing the revised collocation tariff,[5] the overhead loadings used in the collocation tariff are identical to those in the access tariff that was in effect at the time of the filing for comparable services and terms, as the Commission requires.[6] The calculations that underlie the development of these factors appear in Workpaper 5-10 of Transmittal No. 883 and is reproduced in Attachment J. The only difference in the overhead loadings for collocation and access services is for the Virtual Collocation DS3 cross-connect, which was reduced to avoid a rate increase. The overhead loadings are:

Physical Cross-Connects	DS1 Service	DS3 Service
Month-to-Month	1.7000	2.0634
3-Year Term Pricing Plan	1.4571	1.8088
5-Year Term Pricing Plan	1.2953	1.2729

[5] Bell Atlantic Tariff FCC No. 1, Transmittal No. 883 (filed June 4, 1996).

[6] ***See, e.g.***, Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through Virtual Collocation for Special Access and Switched Transport, ***Memorandum Opinion and Order***, 9 FCC Rcd 5154 at ¶ 128 (Com. Car. Bur. 1994); ***Report and Order***, FCC 95-200 at ¶ 5 (rel. May 11, 1995) ("LECs may not recover a greater share of overhead loadings in their rates for virtual collocation services than they recover in rates for 'comparable services,' absent justification").

Virtual Cross-Connects	DS1 Service	DS3 Service
Month-to-Month	1.7000	1.8270[7]
3-Year Term Pricing Plan	1.4571	1.8088
5-Year Term Pricing Plan	1.2953	1.2729

Special & Switched Channel Terminations	DS1 Service	DS3 Service
Month-to-Month	1.7000	2.0634
3-Year Term Pricing Plan	1.4571	1.8088
5-Year Term Pricing Plan	1.2953	1.2729

¶ 72 Request

We require Bell Atlantic to submit overhead loading factors used for each point-to-point DS1 and DS3 Special and Switched Access Service offered. (a.) We require Bell Atlantic to identify the unit investments, direct capital costs, direct operating costs, and prices for these DS1 and DS3 services and (b.) identify and explain the reason for any differences between the methodologies used to develop direct costs for these DS1 and DS3 services and those used to develop the direct costs for virtual and physical collocation service. (c.) We require Bell Atlantic to explain the basis for any difference in overheads: (1) among the various DS1 and DS3 services, on the one hand, and expanded interconnection services, on the other.

Response:

Overhead loadings for DS1 and DS3 services are listed above. The following are the major differences between the standard DS3/DS1 cost studies and the studies of DS3/DS1 collocation services:

1. The equipment used to provide standard DS3s and DS1s is shared among all of the customers for those services and is fungible. That is, if one customer cancels service, the same equipment may be used to provide service to other customers. The equipment can, therefore, be fully and efficiently utilized, and the costs allocated among all customers. By contrast, much of the equipment used for collocation services is dedicated to one or several collocators

[7] This reduced DS3 overhead factor was used to maintain a monthly rate equal to the current tariff. Because this overhead loading differs from the loading for comparable access service.